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ABSTRACT

Examined are the environmental attitudes of United States high school senior classes of 1976-1979. Multi-item indices of concern about pollution, overpopulation, energy conservation, other people, and the importance of material things were administered to about 17,000 students in approximately 130 high schools each year. The four classes of seniors are similar in their environmental views. The only exceptions are a small increase in the importance of money and material possessions, slightly lower support in the class of 1979 for pollution control and concern for others, and slightly lower support for population planning in 1978 and 1979. Correlations among the indices were low, both for the full sample and for selected subsamples. (Author/WB)

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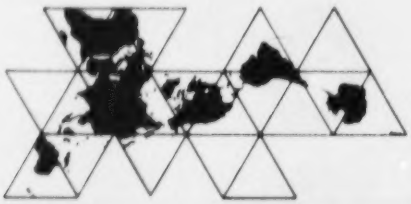

monitoring **the future**

occasional paper series

paper 7

ECOLOGICAL CONCERN AMONG HIGH SCHOOL SENIORS: 1976-1979

John D. Miller
Jerald G. Bachman

Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth

As its title suggests, this study is intended to assess the changing lifestyles, values, and preferences of American youth on a continuing basis. Each year since 1975 about 17,000 seniors have participated in the annual survey, which is conducted in some 130 high schools nationwide. In addition, subsamples of seniors from previously participating classes receive follow-up questionnaires by mail each year.

This Occasional Paper Series is intended to disseminate a variety of products from the study, including pre-publication (and somewhat more detailed) versions of journal articles, other substantive articles, and methodological papers.

A full listing of occasional papers and other study reports is available from Monitoring the Future, Institute for Social Research, The University of Michigan, P.O. Box 1248, Ann Arbor, MI 48106.

ECOLOGICAL CONCERN AMONG HIGH SCHOOL SENIORS: 1976-1979

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January 1980

Abstract

This paper examines the environmental attitudes of the American high school senior classes of 1976 through 1979. Multi-item indices of concern about pollution, overpopulation, energy conservation, "concern for others," and the importance of cars and material things were constructed. The four classes of seniors were remarkably similar in their environmental views. The only exceptions are a small but consistent increase in the importance of money and material possessions across the four classes, slightly lower support in the class of 1979 for pollution control and concern for others, and slightly lower support in the classes of 1978 and 1979 for population planning. Although the authors expected that the various environmentally oriented indices would relate to one another and to the concern for others construct, there was very little association among the opinions seniors held about these issues, both for the full sample and also for two subsamples of seniors, one with higher-than-average grades and greater-than-average interest in politics and the other with the expressed intent of going on to college.

Earth Day in April 1970 marked the emergence of environmental concern as a serious national issue with broad-based public support. Only five years earlier the public had chosen it ninth in a Gallup Poll list of ten national problems, but shortly after Earth Day the public ranked it second--more important than every other problem except crime.

Now, nearly a decade after Earth Day, does that concern still endure? And, in particular, with several studies having shown that younger people are much more concerned about the environment than older people, how environmentally concerned are young people who were pre-teenagers at the time of Earth Day?

This paper deals with high school seniors' views about environmental matters and related issues. We report data from national samples of seniors in the classes of 1976 through 1979, collected as a part of the Monitoring the Future project, an ongoing study by The University of Michigan's Institute for Social Research (Bachman & Johnston, 1978). A basic purpose of the Monitoring the Future project is to report the values, attitudes, and behaviors of young adults along a wide range of socially important dimensions. Further, the study is designed to be able to show changes and trends in such dimensions. The data and analyses reported here deal with four interrelated questions: (1) How do seniors in the late 1970's view environmental issues and attempts to deal with those issues? (2) To what extent have such views changed during the seventies? (3) Are there important subgroup differences in environmental views? and (4) To what degree do views along several different dimensions seem to cohere into an integrated belief system--i.e., to what extent are they intercorrelated?

TRENDS IN ENVIRONMENTAL CONCERN THROUGH THE LATE SEVENTIES

One seemingly widespread misconception about the public's environmental concern is that it has decreased markedly since 1970. Mitchell (1978a) has reviewed the national survey data about the public's environmental concern from 1970 through 1977, and he concludes differently. While some of the available data strongly imply that public environmental concern has decreased continuously and significantly through the seventies, Mitchell argues, other data imply just as strongly that concern is stable and in some cases growing. As is often the case, these disparate results reflect differences in the questions asked.

When the public is asked to volunteer its opinion about the two or three biggest problems facing the country, it is now much less likely than before to mention environmental concern. Between 1970 and 1976 the Harris Poll asked people what they considered to be the two or three biggest problems facing people like themselves. While 40 percent mentioned pollution or ecology in 1970, fewer than 10 percent mentioned these issues in 1976.

But when the public is asked directly about the environment, it responds with strong and even increasing concern. For instance, a 1973 Harris Poll found that 34 percent of the public considered air pollution to be a "very serious" problem. By 1976 that concern had almost doubled, to 66 percent. During the same period, the percentage of people considering water pollution to be "very serious" rose from 40 to 67 percent. In 1975 and 1977, the Opinion Research Corporation (ORC) asked people whether they preferred (a) protecting the environment by paying higher taxes and higher prices for goods and services or (b) accepting more pollution in return for lower taxes and prices. In 1975, 60 percent chose the environment, and by 1977 that figure had risen to 68 percent (Mitchell, 1978a).

A national telephone survey conducted in July 1978 by the Bureau of Social Science Research for Resources for the Future, Inc. (RfF) concludes that, at that date, environmental concern was still strong and unwavering (Mitchell, 1978b). Repeating the ORC question about tradeoffs between environmental protection and higher taxes and prices, the RfF study found that 62 percent of the public still favored environmental protection and higher taxes and prices over the cheaper, more polluted alternative. Repeating a question that the National Opinion Research Center has used since 1973, the RfF study found that 52 percent of the public believes we are spending too little money on the environment, down from the 1973 level of over 60 percent, but up from the 1977 level of 47 percent. The question allowed three alternatives: "...too much money, too little money, or about the right amount." It should be noted, of course, that the actual amounts being spent to preserve the environment rose from 1973 to 1977, and this could have influenced respondents' assessments of the adequacy of spending.

In summary, there is little evidence that the general public's environmental concern is wavering. On the contrary, what evidence there is suggests the opposite.

DEMOGRAPHIC CORRELATES OF ENVIRONMENTAL CONCERN

Another misconception, prevalent especially in the early seventies, was that environmental concern was felt universally, and that there were no differences in concern associated with people's different demographic characteristics. Subsequent research has disproved this notion as well.

Several studies (Dillman & Christenson, 1972; Erskine, 1972; McEvoy, 1972; Tognacci, et al., 1972; and Dunlap, 1975) investigated the demographic correlates of environmental concern. In a review of these and other studies, Dunlap and Van Liere (1978) found age, education and political ideology to be the best predictors of environmental concern; specifically, the young, the well-educated and the liberal showed relatively high levels of environmental concern. The value of these correlations rarely exceeds 0.4. Other variables which are less consistently and/or less strongly associated with environmental concern include residence (urban dwellers more concerned), race (whites more concerned), income (high income people more concerned), and political party preference (Democrats more concerned).

The most recent national survey we reviewed, the July 1978 Resources for the Future survey, generally agrees with these earlier studies, suggesting that the demographic generalizations Dunlap and Van Liere made from them still hold true. The 54 percent of the respondents who declared themselves supporters of increased environmental protection includes higher proportions of young people, political liberals, and well-educated people. In addition, this group of staunch protectors includes proportionally more women, more Democrats and Independents than Republicans, and more union members. There are no differences associated with race or income.

So while public support for environmentalism is not wavering, neither is it constant across all subgroups. And since age seems to be a particularly important demographic determinant of support, it is important to know the environmental views of young people who are just now becoming adults.

THE ENVIRONMENTAL VIEWS OF COLLEGE FRESHMEN IN THE LATE SEVENTIES

One useful source of information about the environmental attitudes of young adults is the American Council on Education's (ACE) annual fall survey of the entering class of college freshmen (Astin, King & Richardson, 1978). Each year the Council surveys approximately 200,000 freshmen at over 2500 participating colleges and universities. Although this population corresponds to only a subset of our own population of high school seniors, we would expect the trends in environmental opinions of college freshmen from 1976 through 1978 to parallel the trends among the college-bound seniors in our own sample

Four questions in the ACE surveys are pertinent to our own study: two questions about pollution, one about energy conservation and one about overpopulation. The first pollution question asks students to "indicate the importance to you personally of each of the following: ...Becoming involved in programs to clean up the environment." Four response alternatives are provided: essential, very important, somewhat important, and not important. As Table 1 indicates, the percentage of entering freshmen who answered "essential" or "very important" was almost constant from 1975 through

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Insert Table 1 about here

1978, at about 28 percent. Although this is far from a majority of students, the fact that one in four expresses a behavioral intention to join environmental cleanup programs is noteworthy. Across all three years, men are slightly more likely than women to say that environmental involvement is important to them.

The next three questions in Table 1 all ask the students to agree or disagree with various statements using a four-point scale. In response to the statement, "The federal government is not doing enough to control environmental pollution," a fairly constant 82 percent "agree strongly" or "agree somewhat" across the three years. This is an overwhelming expression of concern, not only that the federal government should do more, but also that pollution may be getting worse in the

absence of suitable government action. This question also reveals a constant sex difference across the three years, but in this case, women are more likely than men to find the government's actions inadequate.

In response to the statement, "The Federal government should do more to discourage energy consumption," a fairly constant 81 percent "agree strongly" or "agree somewhat." This is as overwhelming an expression of concern as the students gave to the question about the adequacy of government pollution-control efforts. Women are slightly more likely than men to agree, and this difference appears in all three years.

The last of the four ACE statements concerns population policy: "Parents should be discouraged from having large families." About half of the students "agree strongly" or "agree somewhat" with this statement, but the more recent classes are less in favor than their immediate predecessors. Whereas 55 percent of the 1976 freshmen agreed, only 48 percent of the 1978 freshmen said they agreed. By a margin of about 10 percent in each of the three years, men were more likely to agree than women.

In sum, the ACE questionnaire surveyed views about pollution, energy conservation, and population policy, with findings indicating that the views of successive classes of college freshmen in the late seventies were changing only with respect to population policy.

THE ENVIRONMENTAL VIEWS OF HIGH SCHOOL SENIORS IN THE LATE SEVENTIES

Sample and Procedures

The data reported in this section come from the 1976 through 1979 American high school senior classes, collected by the Monitoring the Future (MtF) project. Bachman and Johnston (1978) detail the design and procedures for this project.

Briefly, the MtF project is a series of annual, nationwide surveys of 16,000 to 18,000 high school seniors. (A sub-sample of each annual sample is followed up each year for six years, in order to determine how the lifestyles and values of seniors change as they mature from adolescence into adulthood.) Each survey is

based on a three-stage national probability sample (Kish, 1965). Approximately 115 public high schools and 15 private ones are represented each year.

The survey responses are obtained using self-completed questionnaires, administered by professional interviewers from the University of Michigan's Survey Research Center during one class period in school. Special procedures are used to ensure the confidentiality of every student's responses. Because of the limited time available in one class period, the questionnaire materials are distributed across five different questionnaire forms, with more than 3,000 students filling out each form. All five forms share a core section which includes a number of demographic items.

Description of the Indexes

Seven indexes were compiled to measure seniors' attitudes on a variety of ecological concepts. Items for these indexes were chosen conceptually (by their face validity), rather than empirically. Thus, with one exception, the indexes were constructed as unweighted sums of individual items. The exact wording of the items in all the indexes is given in Table 2, along with Cronbach alpha reliability estimates (Cronbach, 1951). We constructed six indexes as follows:

Two indexes measured beliefs about pollution. The first, Pollution Control (POLL), asks respondents to agree or disagree that "most efforts to prevent (or clean up) pollution" are misguided or unwise. The second, Environmental Tradeoffs (TRADE), asks seniors to choose between environmental control and material comforts.

The three-item Energy Conservation (CONSERVE) index asks respondents whether they make an effort to cut down on driving, electricity use, or home heat in winter to save energy.

The Population Planning (POP) index asks seniors whether they intend to limit their own family's size to prevent overpopulation.

Two other indexes measure the seniors' concern with material possessions. One asks about the Importance of Cars (CARS), while another, Importance of Material Things (THINGS) asks about the importance of a wider range of material possessions (including cars).

The final index measures Concern for Others (CONCERN). Herzog, Bachman and Johnston (1978) have defined "concern for others" as a broad pro-social attitude of willingness to show concern for less privileged groups and to forego personal advantages for the good of others. These authors created and validated a six-item index of concern for others which we will utilize in the present paper. The two "positively" worded items have been double-weighted in order to balance the other four items and reduce response set bias.

The Cronbach alpha measures of internal consistency shown in Table 2 were computed after the indexes were compiled, and they illustrate the multidimensionality of what seem on the surface to be unidimensional scales. The three-item energy conservation measure, for instance, yields an alpha of only 0.36. Thus, people's self-reported conservation behavior appears to vary considerably, depending upon whether the energy is gasoline, electricity or home heat. Likewise, people's attitudes toward environmental tradeoffs (alpha=0.46) vary considerably, depending upon whether the tradeoff is voluntary or government-imposed, and if the latter, whether the government action is a tax or a law prohibiting certain products. People's attitudes toward cars (alpha=0.55) and material things (alpha=0.66) also are not completely unidimensional.

Ecological Attitudes of Seniors: 1979

Seniors from the class of 1979 show considerable support for pollution control, for energy conservation, and for concern about others. They give moderate support to population planning ideas and moderate support to the importance of most material things, except for owning a car, which they find extremely important.

Table 2 outlines these attitudes in more detail. For Index A, Pollution Control, approximately 45 percent of seniors disagree with the idea that pollution control is unwise. Although this figure may seem low, approximately 30 percent of seniors chose the middle ("neither" agree nor disagree) answer in each question, so that the disagree answers always outnumber the agree answers, and sometimes are double their size.

Seniors give overwhelming support to the idea that achieving environmental quality will require tradeoffs, and they endorse these tradeoffs. Roughly three quarters of them believe that either voluntary changes in our buying habits or governmental taxes or prohibitions on some products will be required. Bans on throwaway bottles and cans are most desired, while taxes on polluting products are least popular.

The class of 1979 reports considerable energy conservation behavior. Almost 4 out of 5 report that the heat in their homes is reduced in the winter, and two-thirds report cutting back on electricity. About half report cutting down on driving.

With regard to population planning, about half the class reports a willingness to limit their families to two children, but very few (13.6 percent) are willing not to have any children.

Having a car is quite important to more than 80 percent of the 1979 seniors, but having more than one or a new one or a big one is not at all important. About half the seniors find a fairly wide variety of material things quite important, such as clothes, a house with a big yard, a high-quality stereo and major appliances, like dishwashers, washers and driers.

On the other hand, seniors show considerable concern for others. Eighty-five percent report getting upset when they see other people treated unfairly, and there is more agreement on this question than on any other in the study. On the average, about two thirds of the seniors report concern for others across the six items of the scale.

Trends in Ecological Attitudes of Seniors: 1976-1979

The 1976-1979 senior class trends for the seven indexes are displayed in Table 3. Taken together, they present a picture of great stability in the environmental views of successive classes of high school seniors in the late seventies. The 1979 data give a hint that environmental concern may be lessening, but only a hint.

Insert Table 3 about here

Seniors' views about pollution control and environmental tradeoffs have been quite constant. In 1979, seniors seem slightly less in favor of controlling pollution, but otherwise, there is very little difference among the views of the four senior classes.

Seniors' views about energy conservation have also been very stable. Self-reported conservation behavior in the class of 1976 is slightly lower than in the three succeeding classes, for no apparent reason.

Concern about limiting one's own family size dropped off slightly in the classes of 1978 and 1979 from its level in the two previous classes; but once again, the change is less notable than the stability.

Concern for others rose slightly in 1977 and then dropped slightly in 1979.

Trends concerning the importance of cars and material possessions are difficult to ascertain, because the Monitoring the Future project includes these items only every other year. Both cars and material possessions in general seem to have been more important to the class of 1978 than to the class of 1976, but the differences are not sizeable. To determine whether this apparent trend is real, we looked at two other questions about material possessions which are included every year. When asked how important "having lots of money" is to them, 51 percent of the class of 1979 said "quite important" or "extremely important," compared to 46 percent in the class of 1976. When asked how important "a job which provides you with a chance to earn a good deal of money" is, 89 percent of 1979 seniors said quite or extremely important, versus 86 percent of the 1976 seniors. In both questions, the percentages rise monotonically across the four years, suggesting that successive classes of high school seniors actually are slightly more materialistic than their predecessors.

These data are consistent with the American Council on Education data cited earlier, which also showed little difference in the attitudes of college freshmen from 1976 through 1978. The one difference the ACE survey noted among these classes was a smaller commitment to family planning in each succeeding class. That change is approximately duplicated in responses of college-bound seniors in the present sample, with those in 1978 less willing to limit their own family size than those in 1976 were.

SUBGROUP DIFFERENCES IN THE ECOLOGICAL ATTITUDES OF SENIORS: 1976-1979

Dunlap and Van Liere (1978), in their review of demographic correlates of environmental concern in adult populations, found age, education and political ideology the strongest and most consistent predictors. The present study can provide no data about two of these variables, because high school seniors are all equally educated (in terms of the crude dimension of length of education) and are approximately the same age.

With respect to other variables we have included in the surveys, sex, race, and political party preference have been found by others to be weakly and inconsistently related to environmental concern in studies of adults (Dunlap & Van Liere, 1978). We use parental education level as a surrogate for socioeconomic status, which has shown the same weak but inconsistent relationship in past studies. We also include college plans, in lieu of the educational measures typically included in studies of adults.

As a brief overview of our own results, we find some but not all of our indexes of ecological concern to be weakly related to political ideology, college plans, race, parental education level, and sex, in approximately that order. Although we occasionally find relationships between political party preference and environmental concerns, they rarely display a monotonic pattern across the four gradations of preference from strongly Republican to strongly Democratic. We interpret this uneven patterning to mean that party preference is either not important to seniors' environmental concern or that the two issues are not related in any simple manner.

We found that all of these demographic differences were quite stable across successive classes of seniors; only rarely does a demographic pattern of differences change from year to year in these data. Because the patterns are so stable, we have computed for each index a mean which weights each of the years 1976 through 1979 equally. These means appear in Table 4, for the total sample and the various subgroups.

Insert Table 4 about here

Differences in the political ideologies of seniors are associated with several differences in ecological attitudes. Conservative seniors are more likely to believe pollution control efforts are unwise (the difference between the "very conservative" and the "very liberal" is about 0.49 standard deviations), and they are less willing to opt for pollution controls that require tradeoffs and sacrifices (by a difference of 0.32 standard deviations). Liberals are more willing than conservatives and moderates to limit family size (approximately 0.24 standard deviations), and they express much more concern about the welfare of others (0.49 standard deviations difference between the very conservative and the very liberal). Conservatives are somewhat more likely to find cars and material things important (0.22 and 0.25 standard deviations differences, respectively, between the very conservative and the very liberal).

The radicals are an important exception to these generalizations; they are distinctly more like the conservatives than the liberals concerning most of these issues. Several reasons might account for this general difference. First, the sample sizes in the radical group (and the very conservative group as well) are small, so the values we report are subject to more sampling error than those for the larger groups. This may account for some (but surely not all) of the difference. Second, some seniors may define themselves as radical even though their views are not to the political left of liberals. Radical conservatives, self-styled rebels and others might call themselves radicals and thus make this group's views more conservative. On the other hand, it may be that the seniors in this group are truly radically left, and many of them simply don't endorse liberal views.

Differences among seniors in their college plans are also associated with several differences in ecological beliefs. Seniors who "definitely" expect to complete four years of college are more likely to disagree with statements that pollution control efforts are unwise, and they are more likely to opt for such controls despite the material sacrifices they might require. Between seniors who "definitely will" go to college and those who "definitely won't," these two ecological differences are approximately 0.46 and 0.24 standard deviations respectively. College-bound seniors are also more concerned about other people (0.36 standard deviations difference). Differences in population planning intentions and the importance of material goods are uneven and not easily explained, with seniors who "probably won't" go to college more willing to limit family size than all other seniors and with material possessions slightly more important to seniors who are definite (in either direction) about their college plans.

Several differences in ecological attitudes relate to race differences. Blacks are less in favor of pollution control efforts than whites and are less willing to choose pollution control when that involves sacrifices and tradeoffs (0.29 and 0.26 standard deviations differences, respectively). Blacks are also slightly less willing to limit family size (0.06 standard deviations), they report conserving slightly less energy (0.08 standard deviations) and they feel that material things are slightly more important (0.16 standard deviations). By a considerably larger margin (0.31 standard deviations), blacks are more concerned about other people.[1]

Differences in parents' education also relate to differences in ecological attitudes.[2] Seniors whose parents are poorly educated are less willing to endorse pollution-control efforts and are less willing to choose them when they require material tradeoffs (0.42 and 0.27 standard deviations differences respectively, between seniors whose parents didn't finish high school and those whose parents are college graduates). The children of poorly educated parents report less energy conservation (0.24 standard deviations difference), they feel that cars and material

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[1] Although one of the items concerns "unfair treatment of minorities," it cannot account for the racial difference on the entire index. In fact, in responses to all six items of the index, blacks show higher levels of concern than whites.

[2] Parental education scores were computed as an unweighted average of both parents' scores, or as a single score if only one was given.

goods are slightly more important (0.15 and 0.14 standard deviations differences, respectively), they are slightly less concerned about other people (0.11 standard deviations difference), and they report slightly less willingness to limit family size, although that pattern is not completely monotonic.

The most important sex differences in our findings involve concern for others and the importance of cars and material things. By the largest margin of any subgroup difference in the study (0.61 standard deviations), females are more likely than males to express concern about other people (see Herzog et al., 1978). Males find cars (0.38 standard deviations difference) and material things (0.32 standard deviations difference) more important, and they report less energy conservation (0.20 standard deviation).

The relationships between political party preference and ecological attitudes are generally weak, non-monotonic, and hard to interpret. The most notable difference is that strong Republicans report much less concern for others than any other political group (0.46 standard deviations difference) and they are slightly less in favor of pollution controls in general and pollution efforts that require material tradeoffs (0.15 and 0.12 standard deviations differences, respectively). But seniors who are "mildly Republican" are most in favor of both kinds of pollution control.

INTERRELATIONSHIPS AMONG ECOLOGICAL CONCERNS AND CONCERN FOR OTHERS

As we mentioned earlier, one of the motivations for this paper was to explore the notion that people's attitudes in one ecological domain might relate to their attitudes in another. In particular, we thought that people who favor pollution control might also favor population control, might practice energy conservation, and might find cars and other material things less important than do other people. In part, we reasoned that these relationships should hold because these domains are logically related. For instance, the production and (later) the disposal of material goods causes pollution and consumes energy, so the person who finds material things very important is implicitly opting for the pollution and energy consumption his preferences entail. Automobiles are an extreme case, for they cause pollution and consume energy not only in their manufacture and disposal, but also in their daily operation.

Another reason we thought that people's ecological attitudes in various domains might cohere is that they might fit into a framework integrated around the idea of concern for others. It is not difficult to construct an ecological world view in which a preference for pollution control, population control, energy conservation, and a disinclination to find material things important could all seem to a person to follow directly from his pro-social concern for others. They all involve personal sacrifice for the benefit of others.

A first look at relationships between concern for others and various ecological attitudes was included in the work of Herzog et al. (1978). Using Monitoring the Future data from the 1975 senior class, they found concern for others to be weakly related to concern about controlling pollution and concern about over-population, but not to concern about energy shortages or to self-reported energy conservation.

"Long-Form" Sample and Procedures

The fact that five separate questionnaire forms are used in the Monitoring the Future study severely restricts correlational analyses across the various ecological domains, because the ecological questions are spread across several different forms. For this reason, all the correlations reported in this paper are based on a special "long form" questionnaire, which incorporated nearly all of the material in the five Monitoring the Future questionnaire forms. In the Spring of 1978 the "long form" was administered to 1,050 seniors located in nine high schools nationwide, purposively chosen to reflect the distribution of the Monitoring the Future sample with regard to region, urban density and school size (Herzog & Bachman, 1979). In return for taking two and one half hours to complete the questionnaire, each student was paid $5.00, and each participating school was paid an additional $100.

Comparison of the Two Samples

The attitudes and demographic characteristics of "long form" respondents differ from the 1978 Monitoring the Future respondents somewhat more than one would expect if they were both random samples from the same universe. In particular, the long form sample overrepresents both black students and students whose

parents are less well-educated. In addition, "long form" males rate themselves less likely to go on to college than do MtF males. On the other hand, there are no important differences with respect to school grades, drug use, political orientation and religious commitment.

Insert Table 5 about here

Results

Table 5 shows the correlations among the various indexes we constructed to test these hypotheses. Unfortunately, a very cursory examination of the table shows that our hypotheses were disconfirmed, since almost all of the correlations are very weak. The very high correlation between the "importance of cars" measure and the "importance of material things" measure is, in fact, a part-whole correlation and thus should be discounted. Leaving out this one artifactually high correlation, the arithmetic average of the remaining correlations is 0.11.

Having found little relationship between concern for others and the other ecological variables in our analysis, we entertained the idea that the postulated relationships might well exist, but only for a subset of the population. Converse (1964) has pointed out that hypotheses which fail to be confirmed for the general population frequently hold up for the subset of the population which is college-educated. He argues that the belief systems of these "educational elites" are typically much more integrated than those of the less-educated, because they arise from an exposure to the history of ideas which the less-educated do not share.

Since there are no formal educational differences among the high school seniors in our study, we cannot test Converse's idea directly. We suppose, however, that high school grades might well stand as a surrogate for educational level. Moreover, since ecology is a broad public policy issue, we reason that the subset of students most politically concerned might well show more integrated views about the dimensions of ecological concern we have measured than the full sample of seniors would. Accordingly, we chose a subset (about 10 percent of the full sample) with both higher-than-average grades and greater-than-average interest in politics.

We repeated the correlational analysis shown in Table 5, using only that subset of seniors who reported high grades and great interest in politics. Unfortunately, the result was a near replica of the findings shown for the total sample in Table 5, with very little relationship among any of the variables. The average of the correlations is 0.08, slightly lower than the 0.11 value for the total sample.

As a final attempt at exploring Converse's idea, we investigated the possibility that the intention to go on to college might stand as a reasonable surrogate for educational level. We computed the index intercorrelations for the subset who said they "definitely will" go on to college. The average intercorrelation, excluding the artifactual one between the importance of cars and the importance of material things, is 0.09, also slightly lower than the 0.11 value for the total sample of seniors.

In summary, we find very little evidence that the ecological views of high school seniors cohere into an integrated belief system or that those views are organized by the concept of concern for others.

DISCUSSION

Perhaps the two most striking features of the findings presented here are the apparent stability in seniors' ecological views from the class of 1976 through the class of 1979, and the degree to which these views are not highly intercorrelated. How shall these two features of the findings be interpreted?

One possibility is that the lack of strong trends or substantial correlations results from a lack of serious interest in these matters on the part of most high school seniors. Thus, they may be responding in a "reasonable" way to the stimulus provided by the questions, but their answers may not represent any well-considered or stable viewpoint. This may be true to a considerable degree for a substantial number of seniors; nevertheless, there are several bits of evidence to the contrary, which we will review briefly.

First, it would be useful to know whether views about environmental matters show some degree of stability at the individual level of analysis. Do those individuals who score high along a particular dimension of environmental concern as seniors also score above average several years later? Some evidence from an earlier study, Youth in Transition, suggests that there is a fair degree of stability; specifically, a six-item index of concern about overpopulation showed a four-year autocorrelation

of 0.47 for young men surveyed at age 19 in 1970 and surveyed again at age 23 in 1974 (see O'Malley et al., 1977, Appendix G). This compares quite favorably with the autocorrelation of 0.49 for a 10-item index of self-esteem over the same four-year period. (Self-esteem is treated as a fairly stable personality characteristic, measured with reasonably high reliability. See Bachman & O'Malley, 1977; Bachman et al., 1978; and O'Malley & Bachman, 1979.)

Panel analyses of the Monitoring the Future project are presently possible for the 1979 follow-up of the 1975 senior class. These four-year autocorrelations indicate a comparable degree of stability: population planning, 0.42; environmental tradeoffs, 0.34; and concern for others, 0.47. (The lower value of 0.34 for environmental tradeoffs is consistent with its lower internal consistency—see Table 2.)

A second bit of evidence bears on the question of whether seniors' environmental views really are almost entirely unchanged from1976 through 1979. Is it possible that the indexes we have selected for primary analysis in this paper are less sensitive to change than some other measures might be? As a matter of fact, that seems to be the case. For instance, when responding to the question, "Of all the problems facing the nation today, how often do you worry about each of the following?", the percentage of seniors checking "worry often" about pollution dropped steadily from 36 percent in 1976 to 27 percent in 1979. During the same period, the percentage who indicated they worry often about population growth dropped steadily from 19 percent to 12 percent.

The reader may recall that in the data Mitchell (1978a) cited, whether one decided environmental concern was increasing, lessening or holding constant depended upon which question was asked. When the public was asked to volunteer opinions about the two or three biggest problems facing the country, the percentage of adults who mentioned pollution dropped from 40 percent in 1970 to fewer than 10 percent in 1976. On the other hand, when people were asked their opinion about pollution directly, the percentage who said they considered air pollution a "very serious" problem rose from 34 percent in 1973 to 66 percent in 1976. What do these differences mean?

First, we suggest that our "worry" question and Mitchell's "biggest problems facing the country" question are actually quite similar. Ours asks seniors to state

which of "the problems facing the nation today" they think are biggest by saying how often they worry about them.

Next, we speculate that national problems so large that one worries about them or considers them among the two or three biggest are likely to be problems where no solution is in sight. Since considerable sums of money are now being spent on pollution control and since the federal government has created an Environmental Protection Agency to oversee long-term pollution reduction, it may be that seniors are now less likely to see pollution as a problem which is out of control and unaddressed. But such a change in perception would not necessarily lead today's seniors to be less in favor of pollution control than their predecessors.

Thus, there may be no real inconsistency between our questions which show change over successive classes and those which don't. And the lack of change does not imply insensitivity. We should expect policy positions to change less than assessments of the size of a problem over successive classes of seniors.

There remains now the issue of the rather low intercorrelations among our several indexes of environmental concern and related matters. When we began this analysis we expected that at least an appreciable subset of high school seniors would manifest a "coherent" set of attitudes and behaviors that have to do with environmental issues. We thought that such individuals would be high in concern about pollution, overpopulation, and energy conservation; lower than average in use of energy and emphasis on material consumption; and relatively high in expression of a more abstract "concern for others." The data in Table 5 show that the correlations are nearly all in the expected direction, but they range in size from modest to very small or zero. Furthermore, analyses of "elites" such as those expecting to complete four years of college, or those with high grades and high stated interest in politics, showed no increase at all in the average intercorrelation among these dimensions.

The findings thus suggest that any subgroup of "committed environmentalists" among high school seniors is rather small (since a larger group would have shown a greater impact on the correlations). On the other hand, the results may also indicate that the notion of a "committed environmentalist" who holds "all the right

views" may be misguided from the outset. There is enough genuine controversy about environmental problems and their solutions that it is not so surprising—at least not in retrospect—to find that views about pollution control are not correlated with views about population planning.

It also seems quite likely to us that the large majority of high school seniors have not, in fact, given enough concentrated thought to these issues to lead them to views which are highly consistent or coherent. This is not to suggest that they are not concerned about their environment or committed to environmental quality; rather, we speculate that most seniors have not yet given careful consideration to the implications of those rather amorphous concerns about environmental quality.

In summary, the high school classes of 1976 through 1979 were remarkably similar in their views about pollution, population planning, energy conservation, "concern for others" and the importance of cars and material things. The only exceptions were (a) a slight but consistent increase across the four years in the percentage of seniors who felt money and material goods are important, (b) slightly lower support in the class of 1979 for pollution control and concern for others, and (c) slightly lower support in the classes of 1978 and 1979 for population planning. Contrary to expectations, seniors' views in one ecological area bore little relationship to their views in any other area.

REFERENCES

Astin, A.W., M.R. King and G.T. Richardson
1976 The American Freshman: National Norms for Fall 1976. Los Angeles: Cooperative Institutional Research Program of the American Council on Education and the University of California, Los Angeles.

Bachman, J.G. and L.D. Johnston
1978 The Monitoring the Future Project: Design and Procedures. Monitoring the Future Occasional Paper 1. Ann Arbor: Institute for Social Research.

Bachman, J.G. and P.M. O'Malley.
1977 "Self-esteem in young men: A longitudinal analysis of the impact of educational and occupational attainment." Journal of Personality and Social Psychology 35:365-380.

Bachman, J.G., P.M. O'Malley and J. Johnston.
1978 Youth in Transition, Volume Six: Adolescence to Adulthood—Change and Stability in the Lives of Young Men. Ann Arbor: Institute for Social Research.

Converse, P.E.
1964 "The nature of belief systems in mass publics." In D.E. Apter (ed.), Ideology and Discontent. New York: Free Press.

Cronbach, L.J.
1951 "Coefficient alpha and the internal structure of tests." Psychometrika 16:297-334.

Dillman, D.A. and J.A. Christenson
1972 "The public value for pollution control." In W.R. Burch, et al. (eds.), Social Behavior, Natural Resources and the Environment. New York: Harper and Row.

Dunlap, R.E.
1978 "The impact of political orientation on environmental attitudes and actions." Environment and Behavior 7:428-454.

Dunlap, R.E. and K.D. Van Liere
1978 Environmental Concern: A Bibliography of Empirical Studies and Brief Appraisal of the Literature (Public Administration Series: Bibliography P-44). Monticello, Illinois: Vance Bibliographies.

Erskine, H.
1972 "The polls: pollution and its cost." Public Opinion Quarterly 36:120-135.

Herzog, A.R. and J.G. Bachman
1979 Description of a Special Survey Using a Single Combined Form of the Monitoring the Future Questionnaire. Monitoring the Future Occasional Paper 6. Ann Arbor: Institute for Social Research.

Herzog, A.R., J.G. Bachman and L.D. Johnston
1978 Concern for Others and its Relationship to Specific Attitudes on Race Relations, Sex Roles, Ecology and Population Control. Monitoring the Future Occasional Paper 2. Ann Arbor: Institute for Social Research.

Kish, L.
1965 Survey Sampling. New York: Wiley.

McEvoy, J.
1972 "The American concern with environment." In W.R. Burch, et al. (eds.), Social Behavior, Natural Resources, and the Environment. New York: Harper and Row.

Mitchell, R.C.
1978a "What the public thinks." Resources 57:1-3.

1978b "The public speaks again: a new environmental survey." Resources 60:1-6.

O'Malley, P.M. and J.G. Bachman.
1979 "Self-esteem and education: Sex and cohort comparisons among high school seniors." Journal of Personality and Social Psychology 37: 1153-1159.

O'Malley, P.M., J.G. Bachman and J. Johnston.
1977 Five Years Beyond High School: Causes and Consequences of Educational Attainment. Unpublished Final Report, Grant NE-G-00-3-0198, Project 3-0898, National Institute of Education.

Tognacci, L.N., R.H. Weigel, M.F. Wideen and D.T.A. Vernon
1972 "How universal is public concern?" Environment and Behavior 7:428-454.

Table 1. College Freshmen's Views

		1976	1977	1978
A. Environmental Activism: "Indicate the importance to you personally of each of the following...Becoming involved in programs to clean up the environment" (percentage who consider this action "essential" or "very important").	Total Sample	27.7%	29.4%	27.5%
	Males	29.2	31.1	28.9
	Females	26.1	27.8	26.2
B. Governmental Pollution Policy: "The federal government is not doing enough to control environmental pollution" (percentage who "agree strongly" or "agree somewhat").	Total Sample	82.4%	81.2%	81.5%
	Males	80.3	79.0	78.7
	Females	84.6	83.5	84.2
C. Governmental Energy Conservation Policy: "The federal government should do more to discourage energy consumption" (percentage who "agree strongly" or "agree somewhat").	Total Sample	79.7%	81.8%	81.9%
	Males	77.0	79.8	79.3
	Females	82.6	83.9	84.4
D. Family Planning: "Parents should be discouraged from having large families" (percentage who "agree strongly" or "agree somewhat").	Total Sample	55.1%	52.5%	47.8%
	Males	60.0	57.2	53.1
	Females	49.8	47.7	42.7

NOTE: Data for all four questions taken from Astin, King and Richardson, The American Freshman: National Norms for 1976 and similar titles for 1977 and 1978. All items are measured on four-point scales. For item A, the four points are "essential, very important, somewhat important, and not important." For the remaining items, the four points are "agree strongly, agree somewhat, disagree somewhat, and disagree strongly."

Table 2. Indexes of Ecological Concern

		Class of 1979
Index A. Pollution Control (POLL) (percentage who "disagree" or "mostly disagree" on a five-point scale):		
"Do you agree or disagree that most efforts to prevent (or clean up) pollution...		
...are just too expensive		43.1
...cost more jobs than it's worth		54.1
...are proposed by people who usually don't know what they are talking about		40.2
...will not be enough anyhow		40.3
Cronbach's alpha=	0.79	
Index B. Environmental Tradeoffs (TRADE) (percentage who "agree" or "mostly agree" on a five-point scale):		
"People will have to change their buying habits and way of life to correct our environmental problems"		70.1
"Government should take action to solve our environmental problems even it it means that some of the products we now use would have to be changed or banned"		79.2
"Government should place higher taxes on products which cause pollution in their manufacture or disposal, so that companies will be encouraged to find better ways to produce them"		61.0
"I wish that government would ban throwaway bottles and beverage cans"		82.9
Cronbach's alpha=	0.46	

(Table 2 continued)

Index C. Energy Conservation (CONSERVE) (percentage who report conserving "Yes, quite a bit" or "Yes, to some extent" on a four-point scale):		
"Do you make an effort to cut down on driving, in order to save gasoline"		54.6
"Do you make an effort to cut down on the amount of electricity you use in order to save energy"		67.6
"In the house or apartment where you live, is an effort made to reduce heat during the winter, in order to save energy"		79.1
Cronbach's alpha=	0.36	
Index D. Population Planning (POP)(percentage who "agree" or "mostly agree" on a five-point scale):		
"I feel strongly enough about preventing overpopulation that I'd be willing to limit my family to two children"		53.8
"To help prevent overpopulation, I might decide not to have any children of my own"		13.6
Cronbach's alpha=	0.77	
Index E. Importance of Cars (CARS)(percentage for whom it is "not important" or only "somewhat important" (on a four-point scale) to have a particular possession):		
"Looking toward the future, how important would it be for you to have each of the following things?"		
At least one car		19.3
At least two cars		79.9
A large (full-sized) car		87.8
A new car every two or three years		89.4
Cronbach's alpha=	0.55	

(Table 2 continued)

Index F. Importance of Material Things (THINGS)
(percentage for whom it is "not important"
or only "somewhat important" (on a four-point scale)
to have a particular possession). Index F
includes the four items of Index E plus the
following eight items:

Clothes in the latest style	54.4
A house of my own (instead of an apartment or condominium)	39.3
Lots of space around my house, a big yard	40.9
A well-kept garden and lawn	40.2
Major labor-saving appliances (washer, drier, dishwasher, etc.)	45.8
A high-quality stereo	50.6
A vacation house	86.1
A motor-powered, recreational vehicle (powerboat, snowmobile)	82.3
Cronbach's alpha=	0.66

Index G. Concern for Others (CONCERN)(percentage who
"disagree" or "mostly disagree" except where noted):

We ought to worry about our own country and let the rest of the world take care of itself	43.9
I find it hard to be sympathetic toward starving people in foreign lands, when there is so much trouble in our own country	57.3
Maybe some minority groups do get unfair treatment, but that's no business of mine	70.5
I get very upset when I see other people treated unfairly (percentage who "agree" or "mostly agree")	85.0
I would agree to a good plan to make a better life for the poor, even if it cost me money (percentage who "agree" or "mostly agree")	55.4
It's not really my problem if others are in trouble and need help	75.3
Cronbach's alpha=	0.81

Table 3. Trends in Ecological Attitudes of Seniors

		Indexes						
	(Approximate N)[a]	A. POLL	B. TRADE	C. CONSERVE	D. POP	E. CARS	F. THINGS	G. CONCERN
1976	(2877)	3.50	3.74	2.71	2.82	3.09	2.83	3.76
1977	(3123)	3.48	3.79	2.82	2.86	--	--	3.80
1978	(3121)	3.49	3.74	2.79	2.72	3.03	2.74	3.80
1979	(2860)	3.43	3.69	2.83	2.73	--	--	3.75
Average Index Standard Deviation, 1976-1979		.872	.823	.614	1.106	.586	.559	.740

[a]Since each index includes different numbers of missing data cases, the N's given are an unweighted average over the seven indexes. All index N's are within $\pm$ 13 percent of this average.

Table 4. Subgroup Differences in Ecological Attitudes of Seniors (1976-1979 Averages)[a]

	(Approximate N)[c]	Indexes[b] A. POLL	B. TRADE	C. CONSERVE	D. POP	E. CARS	F. THINGS	G. CONSERVE
Total Sample	(11981)	3.47	3.74	2.79	2.78	3.06	2.78	3.78
Sex								
Male	(5856)	3.47	3.71	2.73	2.79	2.94	2.69	3.55
Female	(6128)	3.48	3.76	2.85	2.77	3.16	2.87	4.00
Race								
Black	(1413)	3.24	3.56	2.74	2.72	3.04	2.70	3.99
White	(9799)	3.51	3.77	2.79	2.79	3.05	2.79	3.76
College Plans (Complete 4 years?)								
Definitely won't	(3346)	3.28	3.64	2.72	2.74	3.02	2.75	3.64
Probably won't	(2183)	3.37	3.70	2.77	2.87	3.07	2.81	3.74
Probably will	(2532)	3.53	3.80	2.80	2.79	3.08	2.85	3.80
Definitely will	(3375)	3.68	3.84	2.85	2.76	3.05	2.74	3.91
Parental Education[d]								
1 Least Educated	(3491)	3.33	3.66	2.73	2.80	3.03	2.76	3.77
2	(4067)	3.47	3.74	2.76	2.75	3.05	2.78	3.74
3	(2120)	3.57	3.77	2.83	2.83	3.04	2.78	3.79
4 Most Educated	(1710)	3.70	3.88	2.88	2.85	3.12	2.84	3.85
Political Preference								
Strongly Republican	(643)	3.43	3.63	2.79	2.80	2.95	2.66	3.54
Mildly Republican	(1558)	3.56	3.76	2.83	2.77	3.02	2.78	3.78
Mildly Democrat	(1856)	3.48	3.74	2.79	2.77	3.05	2.78	3.83
Strongly Democrat	(1179)	3.47	3.71	2.75	2.78	2.92	2.61	3.88
Political Ideology								
Very Conservative	(350)	3.27	3.66	2.76	2.77	2.95	2.67	3.60
Conservative	(1519)	3.53	3.75	2.84	2.78	3.00	2.76	3.72
Moderate	(3891)	3.51	3.75	2.81	2.76	3.06	2.81	3.80
Liberal	(2193)	3.59	3.81	2.79	2.86	3.07	2.77	3.86
Very Liberal	(456)	3.70	3.92	2.79	3.03	3.13	2.81	3.96
Radical	(324)	3.41	3.70	2.58	2.98	2.95	2.64	3.54

[a]These averages weight each year equally.

[b]Standard deviations for each of these indexes (total sample) are reported in Table 3.

[c]Since each index includes different numbers of missing data cases, the N's given are an unweighted average over the seven indexes. All index N's are within ± 13 percent of this average.

[d]Parental education scores were computed as an unweighted average of both parents' scores (or as a single score if only one was given) and then bracketed into four categories.

Table 5. Total Sample Correlations
(Approximate N=808)[a]

	Indexes					
	A. POLL	B. TRADE	C. CONSERVE	D. POP	E. CARS	F. THINGS
A. Pollution Control						
B. Environmental Tradeoffs	.18					
C. Energy Conservation	.07	.19				
D. Family Planning	-.02	.13	.06			
E. Importance of Cars	.06	.08	.23	.02		
F. Importance of Material Things	.03	.02	.25	.02	.79	
G. Concern for Others	.22	.20	.19	-.07	.13	.12

[a]The number of cases per correlation varies from 557 to 959; the mean number of cases is 808.